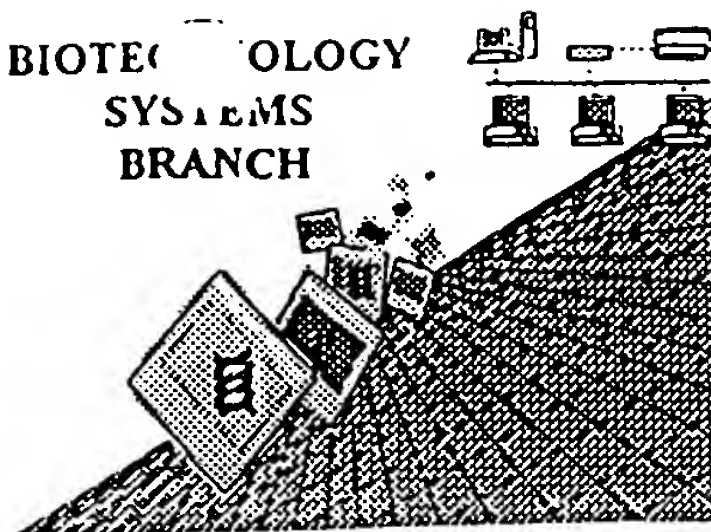




M/A

RAW SEQUENCE LISTING ERROR REPORT



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/825,242A

Source: OIPE

Date Processed by STIC: 8/23/2001

BEST AVAILABLE COPY

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of-the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:

<http://www.uspto.gov/web/offices/pac/checker>

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:56

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

*Does Not Comply
Corrected Diskette Needed
see page 5*

```

3 <110> APPLICANT: Eisenberg, Stephen P.
4      Case, Casey C.
5      Cox III, George N.
6      Jamieson, Andrew
7      Rebar, Edward J.
8      Sangamo Biosciences, Inc.
10 <120> TITLE OF INVENTION: Selection of Sites for Targeting by Zinc Finger
11      Proteins and Methods of Designing Zinc Finger Proteins
12      to Bind to Preselected Sites
14 <130> FILE REFERENCE: 019496-001800US
C--> 16 <140> CURRENT APPLICATION NUMBER: US/09/825,242A
C--> 17 <141> CURRENT FILING DATE: 2001-04-04
19 <160> NUMBER OF SEQ ID NOS: 97
21 <170> SOFTWARE: PatentIn Ver. 2.1
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 25
25 <212> TYPE: PRT
26 <213> ORGANISM: Artificial Sequence
28 <220> FEATURE:
29 <223> OTHER INFORMATION: Description of Artificial Sequence:exemplary motif
30      characterizing the C-2H-2 class of zinc finger
31      proteins (ZFP)
33 <220> FEATURE:
34 <221> NAME/KEY: MOD_RES
35 <222> LOCATION: (1)..(25)
36 <223> OTHER INFORMATION: Xaa = any amino acid
38 <220> FEATURE:
39 <221> NAME/KEY: MOD_RES
40 <222> LOCATION: (4)..(5)
41 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
43 <220> FEATURE:
44 <221> NAME/KEY: MOD_RES
45 <222> LOCATION: (23)..(24)
46 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
48 <400> SEQUENCE: 1
W--> 49 Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50      1          5          10          15
W--> 52 Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
53      20          25
56 <210> SEQ ID NO: 2
57 <211> LENGTH: 5
58 <212> TYPE: PRT
59 <213> ORGANISM: Artificial Sequence
61 <220> FEATURE:
62 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
64 <400> SEQUENCE: 2
65 Thr Gly Glu Lys Pro

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:56

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

```

66      1                      5
69 <210> SEQ ID NO: 3
70 <211> LENGTH: 5
71 <212> TYPE: PRT
72 <213> ORGANISM: Artificial Sequence
74 <220> FEATURE:
75 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
77 <400> SEQUENCE: 3
78 Gly Gly Gly Gly Ser
79      1                      5
82 <210> SEQ ID NO: 4
83 <211> LENGTH: 8
84 <212> TYPE: PRT
85 <213> ORGANISM: Artificial Sequence
87 <220> FEATURE:
88 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
90 <400> SEQUENCE: 4
91 Gly Gly Arg Arg Gly Gly Gly Ser
92      1                      5
95 <210> SEQ ID NO: 5
96 <211> LENGTH: 9
97 <212> TYPE: PRT
98 <213> ORGANISM: Artificial Sequence
100 <220> FEATURE:
101 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
103 <400> SEQUENCE: 5
104 Leu Arg Gln Arg Asp Gly Glu Arg Pro
105      1                      5
108 <210> SEQ ID NO: 6
109 <211> LENGTH: 12
110 <212> TYPE: PRT
111 <213> ORGANISM: Artificial Sequence
113 <220> FEATURE:
114 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
116 <400> SEQUENCE: 6
117 Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
118      1                      5          10
121 <210> SEQ ID NO: 7
122 <211> LENGTH: 16
123 <212> TYPE: PRT
124 <213> ORGANISM: Artificial Sequence
126 <220> FEATURE:
127 <223> OTHER INFORMATION: Description of Artificial Sequence:peptide linker
129 <400> SEQUENCE: 7
130 Leu Arg Gln Lys Asp Gly Gly Gly Ser Gly Gly Gly Ser Glu Arg Pro
131      1                      5          10          15
134 <210> SEQ ID NO: 8
135 <211> LENGTH: 85
136 <212> TYPE: PRT

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:56

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

```

137 <213> ORGANISM: Mus sp.
139 <220> FEATURE:
140 <223> OTHER INFORMATION: DNA binding domain of mouse transcription factor
141      Zif268
143 <400> SEQUENCE: 8
144 Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Arg Ser Asp
145   1          5          10          15
147 Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys Pro Phe Gln
148          20          25          30
150 Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr Thr
151          35          40          45
153 His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Ile Cys
154          50          55          60
156 Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile
157   65          70          75          80
159 His Leu Arg Gln Lys
160          85
163 <210> SEQ ID NO: 9
164 <211> LENGTH: 94
165 <212> TYPE: PRT
166 <213> ORGANISM: Artificial Sequence
168 <220> FEATURE:
169 <223> OTHER INFORMATION: Description of Artificial Sequence:amino acids
170      531-624 in Sp-1 transcription factor
172 <400> SEQUENCE: 9
173 Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly Lys
174   1          5          10          15
176 Val Tyr Gly Lys Thr Ser His Leu Arg Ala His Leu Arg Trp His Thr
177          20          25          30
179 Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg Phe
180          35          40          45
182 Thr Arg Ser Asp Glu Leu Gln Arg His Lys Arg Thr His Thr Gly Glu
183          50          55          60
185 Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp
186   65          70          75          80
188 His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly
189          85          90
192 <210> SEQ ID NO: 10
193 <211> LENGTH: 98
194 <212> TYPE: PRT
195 <213> ORGANISM: Artificial Sequence
197 <220> FEATURE:
198 <223> OTHER INFORMATION: Description of Artificial Sequence:Sp-1
199      transcription factor consensus sequence
201 <400> SEQUENCE: 10
202 Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln
203   1          5          10          15
205 His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Lys Ser Ser His Leu
206          20          25          30

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:56

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

208 Arg Ala His Gln Arg Thr His Thr Gly Glu Arg Pro Tyr Lys Cys Pro
 209 35 40 45
 211 Glu Cys Gly Lys Ser Phe Ser Arg Ser Asp Glu Leu Gln Arg His Gln
 212 50 55 60
 214 Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys
 215 65 70 75 80
 217 Ser Phe Ser Arg Ser Asp His Leu Ser Lys His Gln Arg Thr His Gln
 218 85 90 95

220 Asn Lys

223 <210> SEQ ID NO: 11

224 <211> LENGTH: 10

225 <212> TYPE: DNA

226 <213> ORGANISM: Artificial Sequence

228 <220> FEATURE:

229 <223> OTHER INFORMATION: Description of Artificial Sequence:natural Zif268
 230 binding site

232 <400> SEQUENCE: 11

233 gcgtgggcgc

10

236 <210> SEQ ID NO: 12

237 <211> LENGTH: 10

238 <212> TYPE: DNA

239 <213> ORGANISM: Artificial Sequence

241 <220> FEATURE:

242 <223> OTHER INFORMATION: Description of Artificial Sequence:target site
 243 containing three D-able subsites

245 <400> SEQUENCE: 12

W--> 246 ggnngggnh

249 <210> SEQ ID NO: 13

250 <211> LENGTH: 10

251 <212> TYPE: DNA

252 <213> ORGANISM: Artificial Sequence

254 <220> FEATURE:

255 <223> OTHER INFORMATION: Description of Artificial Sequence:target site
 256 with two overlapping D-able subsites

258 <400> SEQUENCE: 13

W--> 259 nngknngknnn

10

262 <210> SEQ ID NO: 14

263 <211> LENGTH: 10

264 <212> TYPE: DNA

265 <213> ORGANISM: Artificial Sequence

267 <220> FEATURE:

268 <223> OTHER INFORMATION: Description of Artificial Sequence:target site
 269 with three overlapping D-able subsites

271 <400> SEQUENCE: 14

W--> 272 nngknngkngk

10

275 <210> SEQ ID NO: 15

276 <211> LENGTH: 22

277 <212> TYPE: DNA

278 <213> ORGANISM: Artificial Sequence

*see item # 9 10
 on ERROR summary
 sheet*

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:56

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

```

280 <220> FEATURE:
281 <223> OTHER INFORMATION: Description of Artificial Sequence:target site DNA
282     motif searched by protocol 1
284 <220> FEATURE:
285 <221> NAME/KEY: modified_base
286 <222> LOCATION: (1)..(22)
287 <223> OTHER INFORMATION: n = g, a, c or t
289 <220> FEATURE:
290 <221> NAME/KEY: modified_base
291 <222> LOCATION: (10)..(12)
292 <223> OTHER INFORMATION: n = g, a, c or t, may be present or absent
294 <400> SEQUENCE: 15
W--> 295 gnggngnnnnn nngnggngnnn nn                                22
298 <210> SEQ ID NO: 16
299 <211> LENGTH: 23
300 <212> TYPE: DNA
301 <213> ORGANISM: Artificial Sequence
303 <220> FEATURE:
304 <223> OTHER INFORMATION: Description of Artificial Sequence:target site DNA
305     motif searched by protocol 1
307 <220> FEATURE:
308 <221> NAME/KEY: modified_base
309 <222> LOCATION: (1)..(23)
310 <223> OTHER INFORMATION: n = g, a, c or t
312 <220> FEATURE:
313 <221> NAME/KEY: modified_base
314 <222> LOCATION: (11)..(13)
315 <223> OTHER INFORMATION: n = g, a, c or t, may be present or absent
317 <400> SEQUENCE: 16
W--> 318 gnggngnnnnn nnnngnggngnnn nn                                23
321 <210> SEQ ID NO: 17
322 <211> LENGTH: 22
323 <212> TYPE: DNA
324 <213> ORGANISM: Artificial Sequence
326 <220> FEATURE:
327 <223> OTHER INFORMATION: Description of Artificial Sequence:target site DNA
328     motif searched by protocol 1
330 <220> FEATURE:
331 <221> NAME/KEY: modified_base
332 <222> LOCATION: (1)..(22)
333 <223> OTHER INFORMATION: n = g, a, c or t
335 <220> FEATURE:
336 <221> NAME/KEY: modified_base
337 <222> LOCATION: (10)..(12)
338 <223> OTHER INFORMATION: n = g, a, c or t, may be present or absent
340 <400> SEQUENCE: 17
W--> 341 gnggngnnnnn nngnnngnggn nn                                22
344 <210> SEQ ID NO: 18
345 <211> LENGTH: 23

```

FYI:

Use of 'n' and/or 'Xaa' has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using 'n' or 'Xaa'.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:57

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

L:16 M:270 C: Current Application Number differs, Replaced Current Application Number
L:17 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:49 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:52 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:246 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:12
L:246 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:12
L:246 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:259 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:13
L:259 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:13
L:259 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:272 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:14
L:272 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:14
L:272 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:295 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:318 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:341 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:364 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:410 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
L:479 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:502 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:525 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:548 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:571 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:594 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:617 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:640 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:663 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:686 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32
L:704 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33
L:722 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34
L:740 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35
L:763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36
L:786 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37
L:809 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38
L:832 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39
L:855 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40
L:878 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:901 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:924 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43
L:947 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:970 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:993 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46
L:1016 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47
L:1039 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48
L:1062 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/825,242A

DATE: 08/23/2001

TIME: 08:51:57

Input Set : A:\19496-18.app

Output Set: N:\CRF3\08162001\I825242A.raw

L:1085 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50
L:1108 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:1131 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52
L:1154 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53
L:1172 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54
L:1190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55
L:1208 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:1231 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:57
L:1254 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:1277 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59